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# Department of Health and Environmental Sciences

STATE OF MONTANA HELENA, MONTANA 59601

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WHITNEY SUBDIVISION

PLEASE RETURN

November 20, 1980

A. C. Knight, M.D., F.C.C.P.  
Director

Governor's Office, Helena, MT 59601  
City-County Planning Board, 510 N. 28th St., Billings, MT 59101  
City-County Health Department, Rms. 310-311, Courthouse, Billings, MT 59101  
Montana State Library, Helena, MT 59601  
Environmental Quality Council, Helena, MT 59601  
Department of Community Affairs, Helena, MT 59601  
Department of Fish, Wildlife and Parks, Helena, MT 59601  
Department of Highways, Helena, MT 59601  
Department of Natural Resources and Conservation, Helena, MT 59601  
Montana Bureau of Mines & Geology, C/O Montana Tech, W. Park St., Butte, MT 59701  
Fire Marshal Bureau, Department of Justice, 1409 Helena Ave., Helena, MT 59601  
Soil Conservation Service, Federal Building, Bozeman, MT 59715  
Office of Interstate Landsales Registration, ATTN: Carlton Goodwin, Title Bldg,  
Room 324, 909 17th St., Denver, CO 80202  
County Commissioners, Courthouse, Billings, MT 59101  
County Sheriff, Courthouse, Billings, MT 59101  
Information Unit, Department of Health & Env. Sciences, Helena, MT 59601  
Environmental Information Center, Box 12, Helena, MT 59601  
Montana Historical Society, 225 N. Roberts, Helena, MT 59601  
Joe Steffes, 1102 Emerald Hills Dr., Billings, MT 59101  
Tom Astle, 111 Burlington Ave., Billings, MT 59101  
Bill Hemmings, 250 Alta Vista Ave., Billings, MT 59601  
Sanderson, Stewart & Gaston Engineering Inc., 1629 Avenue D, Billings, MT 59101  
Cumin Associates, 528 Grand Ave., Billings, MT 59101  
Leigh, Scott-Cleary, Inc. 1615 Downing St., Denver CO 80218  
Robert S. Sindelar, Superintendent, Shepherd Public Schools, Shepherd, MT 59079  
Yellowstone County Assessors Office, Courthouse, Billings, MT 59101  
Donald Whitney, Shepherd, MT 59079  
Steve Spitzer, Shepherd, MT 59079  
John Dilley, Shepherd, MT 59079  
O'Donnell Fire Service, 2401 - 2405 2nd Ave. N., Billings, MT 59101  
Billings Gazette, 401 N. Broadway, Billings, MT 59101

RE: Whitney Subdivision  
Yellowstone County

Ladies and Gentlemen:

The enclosed preliminary environmental review has been prepared for Whitney Subdivision in Yellowstone County, and is submitted for your consideration. Questions and comments will be accepted until December 4, 1980. One extension of time not to exceed seven days will be granted upon request if there is sufficient reason for the request. All comments should be sent to the undersigned.

STATE DOCUMENTS COLLECTION

NOV 24 1980

MONTANA STATE LIBRARY  
930 E Lyndale Ave.  
Helena, Montana 59601

Sincerely,

Edward W. Casne, P.E., Chief  
Subdivision Bureau  
Environmental Sciences Division

EEO/AFFIRMATIVE ACTION AGENCY



DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES  
Cogswell Building, Helena, Montana 59601  
(406)449-3946

PRELIMINARY ENVIRONMENTAL REVIEW

Division/Bureau Environmental Sciences Division/Subdivision Bureau

Project or Application Whitney Subdivision

Description of Project This is a proposed subdivision located approximately 12 miles, Northeast of downtown Billings and two miles West of Shepherd in the N 1/2 Section 17, T 2 N, R 27 E, P.M.M., Yellowstone County. It is proposed to subdivide 274.3 acres into 164 lots ranging in size from 1.0084 acres to 4.6 acres in five phases. Phase I consists of 25 lots ranging in size from 1.0084 acres to 3.0377 acres. The subdivision would be served by individual water and sewer systems. The department is currently reviewing Phase I for adequacy of sanitary facilities. Subsequent filings will need to receive planning board and Department of Health & Environmental Sciences review and approval.

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Terrestrial & aquatic life and habitats			X			*
2. Water quality, quantity and distribution			X			*
3. Geology & soil quality, stability and moisture			X			*
4. Vegetation cover, quantity and quality			X			*
5. Aesthetics		X				*
6. Air quality			X			*
7. Unique, endangered, fragile, or limited environmental resources				X		
8. Demands on environmental resources of land, water, air & energy			X			*
9. Historical and archaeological sites					X	*

# POTENTIAL IMPACTS ON HUMAN ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Social structures and mores			X			*
2. Cultural uniqueness and diversity			X			*
3. Local and state tax base & tax revenue		X				*
4. Agricultural or industrial production			X			*
5. Human health			X			*
6. Quantity and distribution of community and personal income			X			*
7. Access to and quality of recreational and wilderness activities				X		
8. Quantity and distribution of employment			X			*
9. Distribution and density of population and housing		X				*
10. Demands for government services		X				*
11. Industrial & commercial activity			X			*
12. Demands for energy			X			*
13. Locally adopted environmental plans & goals				X		
14. Transportation networks & traffic flows	X	→ X				*

Other groups or agencies contacted or which may have overlapping jurisdiction Yellowstone County Commissioners

Individuals or groups contributing to this PER. Cumin Associates Environmental Assessment, Leigh, Scott & Cleary, Inc. Traffic Impact and Accessibility, Bill Hemmings, P.E., O'Donnell Fire Service, Robert S. Sindelar, Superintendant Shepherd Schools, Yellowstone County Assessor's Office, Soil Conservation Service.  
 Recommendation concerning preparation of EIS Recommend not to prepare an EIS

PER Prepared by: Alfred P. Keppner

Date: November 17, 1980



1. Terrestrial and Aquatic Life and Habitats

The existing vegetation is essentially native range consisting of various dryland grass species, sagebrush and rabbitbrush. Where drain ditches are cut and over grazing has occurred, perennial invaders, thistle and salsify have become established. Future homeowners are likely to attempt to establish lawns and ornamental trees and shrubs. The development of this property should improve vegetative cover but attempting to establish vegetative cover will be expensive and discouraging.

Lack of forage and cover render this property undesirable for wildlife although animals like coyotes, fox, jackrabbits and various rodents may traverse the property. Songbirds may be seen at various times of the year.

The only aquatic habitat on the property is a pond on the western part of the development. The water is salty and does not support fish life. Ducks have been seen landing on the pond on their migratory route.

2. Water Quality, Quantity and Distribution

A hydrogeologic report prepared by William Hemmings, P.E. indicates the subsurface geology consists of layers of clay, silt clays and fractured and degrading shale. This layer of material extends down to about 40 to 65 feet as evidenced by two well logs from wells adjacent to the property (see location map). Below this the Bearpaw Shale is encountered. Below the Bearpaw Shale the Judith River formation is encountered. This formation consists generally of alternating beds of yellow to brown sandstone and dark grey shale and can yield quantities of water greater than 10 gpm of a quality generally better than that which is found in the terrace deposits above the Bearpaw Shale. Another well adjacent to the proposed subdivision takes water from the Judith River formation at the 320 foot level at 40 gpm.

From pump test data the specific capacity of a 40 foot well adjacent to the property would be 2.50 gallons per minute per foot of drawdown. The hydrogeologic report concludes that shallow wells (40-65 feet) on each lot of the first filing of Whitney Subdivision should yield a minimum of 10 gallons per minute with drawdown varying from 15 to 33 feet.

The effects of septic tank drainfields on groundwater quality are not expected to be significant. The first aquifer lies at a depth of 40 to 65 feet overlain by clayey materials. The second aquifer lies at 320 feet. On-site investigations indicates the soils are suitable for on-site sewage treatment and disposal although drainfields will necessarily have to be large because of the heavy nature of the soil.

Storm runoff will not directly discharge into state waters. The storm runoff from Phase I will be diverted to the borrow pit along 12 mile road.

3. Geology and Soil Quality, Stability and Moisture

See comments under item No. 2 in Potential Impacts on the Physical Environment - Water Quality, Quantity and Distribution.

4. Vegetative Cover, Quantity and Quality

See comments under item No. 1 in Potential Impacts on the Physical Environment - Terrestrial and Aquatic Life and Habitats.

5. Aesthetics

The major aesthetic impact would be to convert a rural-agricultural landscape into a suburban landscape. The houses would be visible from the county road but not from any primary highway. Most of the surrounding land is farm and ranch land but some subdivision activity has taken place.

6. Air Quality

The roads in the subdivision will be built to Yellowstone County gravel road standards. This will cause some degradation of air quality due to dust caused by vehicular traffic. Constructing roads with material that has low silt content will help mitigate this problem.

8. Demands on Environmental Resources of Land, Water, Air and Energy.

Rural subdivisions require more energy and materials than urban expansion due to lower density and required extension of roads and utilities. Rural residents consume more energy than urban residents in transportation to places of employment, school and commerce. However, there are no demands on resources that are unique to this subdivision.

9. Historical and Archaeological Sites

There are no known historical or archaeological sites on the property. However, an on-Site historical or archaeological investigation has not been conducted.

POTENTIAL IMPACTS ON THE HUMAN ENVIRONMENT

1. Social Structures and Mores

While it is difficult to determine the final impact development will have on social structures and mores since it is not known who would purchase lots, it does not seem reasonable to believe that these lots would be purchased by people whose social or moral values are atypical of the general community.

2. Cultural Uniqueness and Diversity

See comments under item No. 1 in Potential Impacts on the Human Environment - Social Structures and Mores.

### 3. Local and State Tax Base and Revenue

The environmental assessment summed up to effect the subdivision would have on taxes as follows:

The approximate 275 acre site carries, at present, a taxable valuation of \$2,291 on an assessed valuation of \$20,968, current year taxes are 677.74. This total is composed of 388.55 for school district taxes, 16.04 for state taxes, 103.26 for county taxes, and 148.12 for the Shepherd Drain and 21.77 for livestock. The major change occurring after completion of the development will be the addition of residences to the tax rolls. This will increase the valuation of the area.

### 4. Agricultural or Industrial Production

The environmental assessment summed up the effect the subdivision would have on agricultural production as follows:

As the Whitney Subdivision site is relatively "unabundant" and could only be used agriculturally for some limited livestock grazing, the eventual development of 164 single family homesites on this land will not result in any recognizable loss of area agricultural production.

Currently, the subdivision site is surrounded by agricultural operations some of which are in the process of changing. Directly south of the site is the tentative location of another single family residence acre lot subdivision, the preliminary plat of which has been approved. To the west and north of the proposed subdivision are hayfields and a dryland wheatfield, respectively. To the east of the site and along the northeast perimeter of the site are three single family homes.

The only way that the development of this subdivision could directly affect agriculture is if a conflict should develop between subdivision residents and users of the B.B.W.A. Canal.

### 5. Human Health

The B.B.W.A. Canal traverses the northwest section of the property. The canal may present a hazard to small children.

### 6. Quantity and Distribution of Community and Personal Income

This is a difficult impact to access as it is not known from where future residents might come or where they would be employed. Some may already live in the area and have little impact with respect to distribution of income. Residents who come from outside the area would cause an increase in community income. Since it can be assumed that the majority of residents will work and shop in the Billings area, this subdivision should have only a minor impact on distribution of income, commercial activity or employment in the Shepherd area.



8. Quantity And Distribution of Employment

See comments under item No. 6 in Potential Impacts on the Human Environmental - Quantity and Distribution of Community and Personal Income.

9. Distribution and Density of Population and Housing

If Whitney Subdivision were fully developed, there would be 164 single family residences in an area that is now pasture. The surrounding area is generally in agricultural production. Approval of this development would result in an increase of population and housing density in the localized area of the proposed subdivision.

10. Demands for Government Services

Grade and high school students would school in Shepherd. In a letter to Cumin Associates Robert S. Sindelar, Superintendent of Schools, has the following comments on the effect Whitney Subdivision would have on the Shepherd Schools:

Our present high school enrollment as of 12-5-79 is 218 - up about 8 students from the 10-1-78 enrollment of 210. Although this is not a great increase, it must be noted that there was a large graduating class of 40 and an incoming 8th grade class of 33. We have refused out-of-district high school students (legal through County Attorney ruling) on the basis of over-crowding for the past two years.

Our present enrollment of 218 fluctuates - it has already been as high as 225 during the first week of school. It is decidedly on the upswing. (See attached computer data projection). Our system may hold up to 250 high school students if we can move two elementary classes out of the Annex (an old vintage remodeled wood structure). It would require hiring one or two additional staff, and also supplies.

Our present elementary enrollment is 334 as of 12-5-79. This is up about 19 students from October 1, 1978. We also do not permit out-of-district enrollment in the elementary due to over-crowding. We have added a six (6) classroom addition scheduled to be completed as of 10-15-79. Due to a strike of heating manufacturers, it will not be ready on schedule. With the addition we should be able to house 400 students with additional new instructors and supplies. This new addition may be ready by February of 1980.

The past two and one-half years, we have had the following subdivisions proposed and/or approved.

1. 100 units west of Larimer Road (H.S.)
2. 58 units east of Larimer Road (El. & H.S.)
3. 6 units 3/8 mile north of Shepherd (El. & H.S.)
4. 53 units 1/2 mile north of Shepherd (El. & H.S.)
5. 35 units north of Feed Lot #2 (El. & H.S.)
6. 33 units 1 mile south and 1/14 mile west of Shepherd (El. & H.S.)



7. 28 units 1.6 miles south of Shepherd west side of road (El. & H.S.)
8. 33 units on Highway 312 west-southwest of Kramer Horse Ranch (H.S.)
9. A proposed subdivision by Kenneth Yerger northwest of Shepherd 9 miles (El. & H.S.)
10. A proposed 79.8 acre development (54-56 lots) 1/14 mile north of the Quik-Mart on 12-Mile Road (El. & H.S.)
11. A proposed 46 mobile home unit on Drury Lane (H.S. only) Killed by County Commissioners.
12. A two unit subdivision by Lynn Severance
13. Individual lots and land for sold not subdivided

We have build in 1965, 1970, 1975, and again in 1978. The frequency of must building is increasing to accommodate the students.

Our new six (6) room addition to the elementary building increased our total millage in the Shepherd School District #37 from 188.53 in 1978-79 to 221.67 in 1979-80. The above was not, I repeat was not, an operational cost increase, strictly building costs.

Without industry Shepherd is very limited in its tax base, and can forse double shifting in the high school area's if the continued increase in building occurs in the area.

Quality education is a concern of the trustees, and an orderly controlled growth is essential to insure this fact.

Solid waste disposal collection service is available to serve this subdivision. The ultimate disposal site is the Billings landfill which is licensed and approved by the Solid Waste Management Bureau of the DHES.

Police protection would be provided by the Yellowstone County Sheriff's Office.

Whitney Subdivision is not within the boundaries of a rural fire district. Future lot owners can subscribe to O'Donnell Fire Service for fire protection. The nearest fire station is located at the intersection of Old Highway 10 and Bitterroot Drive, a distance of six miles.

Ambulance service would be provided out of Billings by Billings Ambulance and Wheelchair Service. They are located ten miles from the proposed subdivision.

It is proposed to dedicate 27 acres of land in the southwest part of the property for parkland. This land is affected by extreme saline and possibly alkali conditions. In the Subdivision Improvements Agreement the developer agrees to reclaim the area by providing a drainage system and by the application of gypsum. If these efforts fail reclaim the proposed parkland, the developer will dedicate land in the northwest part of the subdivision for parkland.

11. Industrial and Commercial Activity

See comments in item No. 6 in potential Impacts on the Human Environment - Quantity and Distribution of Community and Personal Income.

12. Demands for Energy

Electrical service will be provided by the Yellowstone Valley Electric Co-op. Power lines currently exist along the east and north sides of the subdivision.

A Mountain Bell underground telephone cable runs along 12 Mile Road. If the developer would run telephone cable through the subdivision, the telephone company would serve the subdivision.

14. Transportation Networks and Traffic Flows

The environmental assessment prepared by Cumin Associates addressed the impact the proposed subdivision would have on roads as follows:

The Preliminary Plat accompanying this assessment indicates that approximately 33,498 linear feet of roadway will be constructed to serve the fully occupied subdivision. These roadways will be constructed according to Yellowstone County gravel road specifications. They will have a crowned gravel section, flanked on each side by "borrow pits". The developer of Whitney Subdivision will construct the roadways; thereafter they shall become the responsibility of Yellowstone County.

The Preliminary Plat indicates that the subdivision intends to dedicate half right of ways for: Osness Road-40 feet, Larimer Road-50 feet, Yeoman Road-50 feet, and 12 Mile Road-50 feet. With the exception of the 80 foot right of way for Steiner Drive, the other roads inside the boundaries of the proposed subdivision are shown with 60 foot right of ways.

The plat also indicates that negotiations will likely have to be made with existing property owners along Yeoman and 12 Mile Roads, in order to obtain a uniform roadway Right of Way.

A traffic impact and accessibility evaluation was prepared for Whitney Subdivision by Leigh, Scott and Cleary, Inc. They estimated the subdivision would generate about 1580 vehicle trips per day. This would be 790 vehicle trips into the subdivision and 790 out of it during an average day.

The traffic volumes are based on an assumed directional distribution of traffic of about 88 to 92 percent of the traffic oriented towards the south along 12 Mile Road, 5 to 10 percent oriented to the east along Yeoman Road and 2 to 3 percent oriented to and from the north along 12 Mile Road. As indicated, about 1400 vehicle trips per day would use 12 Mile Road to and from the south.

The greatest amount of traffic to and from the Subdivision will use the southernmost access road intersecting 12 Mile Road approximately one-half mile south of Yeoman Road. At full development, this intersection will accommodate approximately 950 vehicles per day. A secondary inter-

section located approximately one-quarter mile south of Yeoman Road will handle about 450 to 475 vehicles per day. Because most of the traffic to and from the Whitney Subdivision will be oriented toward the south, the intersection between Yeoman Road and 12 Mile Road will handle only light traffic volumes. Approximately 200 to 250 vehicles per day moving to and from the Whitney Subdivision will use this intersection.

The greatest traffic impacts resulting from the Whitney Subdivision will be on 12 Mile Road south of the Subdivision and on U.S. 312. 12 Mile Road, which now carries about 500 vehicles per day north of U.S. 312, would carry an additional 1400 or so vehicles per day to and from the Whitney Subdivision.

In the future, as urbanization in this area proceeds, the intersection between U.S. 312 and 12 Mile Road should be modified. In this manner, the various streets coming into the intersection can be separated so that a simple four-way intersection to the north between Chicago Road and 12 Mile Road would separate traffic movements by 300 or 400 feet along 12 Mile Road.

# EXHIBIT A

